a second duplexing technology, Frequency Division Duplexing (FDD), requires noncontiguous portions of the spectrum; one band of the spectrum is used to receive calls and a second band to send calls. Therefore, to keep the door open for use of FDD, the bands of spectrum for nonlicensed use should include non-contiguous bands, so that use of FDD will be possible.

V. STANDARDS

A. Common Air Interface

Numerous parties agreed with Telesis about the critical need for Common Air Interface (CAI) standards and the importance of an active Commission role in assuring such standards are in place. See, e.g., Ericsson at 11: "Allowing the marketplace alone to resolve which PCS technologies will be implemented could create a chaotic technical situation in which a variety of incompatible access schemes are implemented"; Motorola at 24: "The first step in achieving universality is to require that only approved standardized CAI's be used for 1.8 GHz PCS"; TIA at 7: "The Commission can greatly assist the development of PCS by ultimately recognizing and endorsing common air interface standard(s) developed by industry"; Cox at 26-27: "Cox submits the Commission should adopt standards to define basic operating parameters and to facilitate intersystem operation ... without such standards, the growth of PCS will be stymied and the market fragmented"; Cellular Service, Inc. at 5: "The Commission should exert its authority to specify common air interfaces so that all systems are compatible";

Southwestern Bell at 28: "The Commission should ... encourage the development of a common air interface...[to] ensure that new developments and future enhancements follow the technology rather than the particular provider of the technology."

These parties recognize the very real danger that, in the absence of standards, PCS providers could create a patchwork quilt of incompatible PCS services. Consumers would be required to own multiple handsets, depending upon their location, and could be left with unusable equipment after the marketplace selects the "winning" technology. Investment in mass production of PCS equipment would be delayed.

For these reasons, Telesis strongly disagrees with those parties who would leave the development of PCS standards totally in the hands of the industry, with no formal Commission requirement for minimum standards in advance of service initiation. See, e.g., McCaw at 39-40; APC at 61; Time Warner at 12; Telocator at 14. The Commission's recent proposal to adopt an AM stereo standard required by the Telecommunications Authorization Act of 1992 serves as a useful precedent in this regard; see FCC Press Release dated December 10, 1992, in Docket No. 92-298. The legislation mandating an AM stereo standard came about after a decade in which the marketplace failed to thrive because of the uncertainty by manufacturers who were reluctant to commit the resources to develop the technology in the absence of a standard.

The experience of the European cellular industry offers another example in support of the notion that

established technical standards foster rather than inhibit innovation and the rapid development of markets. European countries failed to define an analog standard for cellular; as a result, equipment costs were high, roaming was not possible, and subscribership was low. Learning from their mistakes, the European Community developed the digital GSM standard, which has energized the European cellular industry. Already, the costs and size of GSM handheld units are less than hand portables for some of Europe's analog systems, and GSM has only just begun to roll out. See "Mobile Communications," Financial Times Business Enterprises Ltd., Issue 111 (Oct. 8, 1992) at 1.

Telesis does not advocate replacing the expertise of industry standards bodies by regulators. Rather, we stress the need for a minimum level of Commission involvement and oversight in mandating and approving an industry-ratified standard or standards, in order to achieve the full promise of PCS. Existing industry standards bodies have the necessary resources, expertise and incentive to develop PCS standards.

Contrary to MCI's comments (MCI at 20), standards bodies should not and do not attempt to determine policy, but rather make technical evaluations and develop technical standards consistent with current regulatory policy. The example MCI references (MCI at 19) was an attempt by MCI alone to implement technical changes prior to resolution of the policy issue by the appropriate government body (in this case the Department of Justice). The standards body mentioned by MCI, TR45.2, appropriately deferred action on MCI's request

pending a final policy by the MFJ court. There has been no attempt in the standards process to frustrate any request for resolution for a legitimate technical issue.

B. Nonlicensed CAI And Access

In our Comments, we stated that CAI standards should also apply to at least a portion of the nonlicensed spectrum (Comments at 46). Many versions of the in-building wireless telephone systems now being tested use innovative but proprietary air interfaces. Without some provision for nonlicensed protocols or standards, in-building handsets will be useless outside their home system. More importantly, visitors to office buildings with private in-building networks will have no way to use or be reached by their PCS. Our recommendation to dedicate part of the nonlicensed duplex spectrum to the licensed PCS CAI will make handset interoperability between private in-building systems and public services possible.

Bellcore market research shows that the highest business demand for wireless access to the PSTN is not in the respondent's own office, but rather in the offices of clients or suppliers. The research indicates that many potential business subscribers would not buy PCS if coverage is restricted just to the premises where they work. For example, 37% would not buy PCS if client locations are not covered. Bellcore, PCS Residential and Business Market Research Report, Oct. 1992, p. 23. This strong business need for wireless telephone access while visiting other peoples' offices suggests

that all in-building wireless systems should provide wireless access to the public switched network.

To facilitate this, we further recommend that all nonlicensed wireless voice systems offer wireless access for visitors to the PSTN via a CAI. In early years, visitors to a building served by a private nonlicensed wireless system could make outward calls via a calling card. The location enabling these calls would share in the revenue, like any other payphone provider. As intelligent network capabilities become available on the public network, routing of incoming calls via database registration by private systems and the PSTN should also be provided.

C. 911 Interfaces

Our Comments also noted the need to develop standards for 911 interfaces, so that rapid emergency responses to 911 PCS calls would be possible (Comments at 49-50). APCO's Comments, pp. 4-5, recognize the same problem and call for the Commission to "impose appropriate requirements." Telesis suggests that the Commission should encourage public safety agencies to work with PCS providers in such forums as APCO's Project 31 and the ANSI committee T1P1 to develop PCS-based 911 services that meet the public's expectations. For example, APCO's Project 31, planned to start in March 1993, will define initial standards for PCS and E911 service. Also, the Joint Technical Committee ("JTC"), comprised of participants from two standards organizations (Committee-T1 and TIA), is currently engaged in developing CAI standards for PCS. The JTC has

recognized the importance of E911 access, and will take it into consideration in developing CAI requirements. We actively participate in the JTC and plan to participate in Project 31 and other forums on this issue.

VII. CONCLUSION

For the reasons stated above and in our opening Comments, Pacific Telesis Group respectfully submits that Local Exchange Companies such as Pacific Bell and Nevada Bell should be eligible to obtain a Personal Communications Service license in their franchise areas, whether or not a cellular affiliate also serves those areas.

National PCS licenses would provide no benefit and would deprive the country of valuable diversity and innovation; instead, we recommended that Basic Trading Areas are appropriate geographic areas for licenses. There should be three PCS licensees in each area, with 25 MHz of spectrum each. More than 20 MHz of spectrum is needed for nonlicensed

services. Finally, the PCS industry should be encouraged to develop Common Air Interfaces.

Respectfully submitted,

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